OPERATION BUGOUT

1964

Salmon National Forest

FOREST DESTRUCTION
A SERIOUS ECONOMIC PROBLEM IN IDAHO

Partial Destruction of over a million and a half acres of Douglas-fir and true fir timber is presently threatened by infestations of a small insect, the spruce budworm, *Choristoneura fumiferana* (Clem.).

Late in 1963, surveys by Forest Service entomologists indicated that the epidemic could be expected to continue. Natural enemies of the budworm have not checked the epidemic or prevented further damage, and the infestation has extended over 1,500,000 acres on the Salmon and other nearby National Forests. In an effort to curtail this severe loss to Idaho, the U. S. Forest Service, Intermountain Region, is planning control on approximately 500,000 acres this summer.

THE SPRUCE BUDWORM:

Prior to the current critical infestation against which control efforts began in 1963, the last serious outbreaks requiring control were on the Boise, Payette, Challis, Salmon, and Targhee National Forests in 1955, '56, and '57. This particular epidemic was suppressed over the three-year period.

Spruce budworm is potentially one of the most destructive enemies of Douglas-fir and true firs in North America. Principal damage results from the caterpillars feeding on new foliage. Deformation, reduced growth, or death to the trees is the result of sustained, uncontrolled attacks of the pests. The insect attacks trees of all ages indiscriminately but is particularly damaging to saplings and young stands. The older trees sometimes survive but with reduced growth rates.

WHY THIS MUST BE DONE . . . NOW

Timber values critical to local communities and state economy must be maintained. The forests of tomorrow must be protected.

The allowable timber harvest from management units (working circles) may be reduced by insect damage.

A costly crash salvage program yielding poorer quality logs can result from the infestation.

Insect-killed forests increase the overall forest fire hazard.

Forest aesthetics, wildlife habitat, and controlled usable waterflow will be lost to Idahoans and the visiting American public.

FACTS ABOUT THE SPRAY OPERATION

OBJECTIVES:

I. To reduce the infestations to the lowest possible level consistent with public safety, protection of fish and wildlife resources, good multiple use management, and economy.

II. To keep the public informed regarding planning, operation, and completion of the project.

III. Work closely with cooperators, interested individuals, and organizations.

DURATION:

On suitable flying days from late June to late July, aerial application of DDT spray on the infested timber will be done from 4:00 a.m. to about 10:00 a.m. Estimated time for completion of the project is 20 days. Future control work will be based on the insect population status and on new, approved control procedures.

SAFETY AND SPRAYING:

The most severely infested timberlands will be sprayed in 1964. Spraying will be accomplished with both fixed-wing aircraft and helicopters for tight control. Fixed-wing aircraft will fly from the Salmon and Challis airports, while helicopters will operate from selected bases on the Salmon National Forest.

Salmon-spawning streams, trout streams and lakes, and water impoundments have received special protective considerations by State Fish

and Game biologists and by Forest Rangers. A spray technique developed through last year's special test on the Salmon National Forest will be used. This test showed that aerial spraying can be accomplished with protection of other National Forest resource values.

I. Protection Areas–NO SPRAY TO BE APPLIED

a. 100-foot strips paralleling streams having bank slopes under 60%. (A 100% slope is a 45° angle.)
b. A 200-foot strip paralleling streams having bank slopes from 60% to 100%.
c. A 400-foot strip along streams with bank slopes steeper than 100%.

II. Spray areas and amounts

a. Adjacent to a non-spray area, the first 400-foot strip will receive ½ pound DDT per acre. This application will be made with helicopter to insure tight control of spray distribution.
b. Outside the 400-foot strip, fixed-wing aircraft will be used to apply one pound of pesticide per acre.

III. Additional Protection

Spraying operations will be constantly monitored throughout the project by personnel of the Forest Service, the Idaho Department of Fish and Game, and other agencies. The non-spray strips will be widened if necessary for stream protection.

WHAT'S AT STAKE

Aesthetic, wildlife, and watershed values involved cannot be measured in dollars and cents. These values do assume national importance in the highly popular recreation and hunting and fishing areas located on the Salmon National Forest, particularly that area known as "the Salmon River country."

The volume of timber alone makes the project a necessity. In critical danger are 553 million board feet – enough to build 50,000 modern homes.

If the spruce budworm is allowed to go unchecked, the forest will be destroyed and with it values important to each of us.

YOU AND THE SPRAY

The spray will be applied at rates which assure satisfactory spruce budworm mortality, but which have been demonstrated to be non-toxic to humans. Fishery resources will be protected by the carefully planned and tested spray patterns described previously. (It should be pointed out that the rate of application for agricultural purposes exceeds this amount two to three times.)

IS THERE DANGER TO YOU?

If you should happen to be in an area where the spray is settling through trees, you, your children, and your pets will not be harmed. You may notice a momentary mild smog-like irritation. Any insecticide on clothing, cars, and other items can be removed completely by washing or dry cleaning. You are advised to cover exposed food. These precautions are no different than those you would normally make in applying insecticide around the home.

PROTECTING WILDLIFE

Last year's test project indicated that fish, birds, wildlife, and domestic animals can be protected under carefully controlled applications. Precautions include attention to spray concentrations, stringent application rates, and prescribed application patterns. Ground-to-air and air-to-air communications will provide immediate observer control of aircraft to avoid possible application problems. Flight patterns have been set up to preclude spray reaching salmon-spawning grounds, fishing waters, and other critical areas.

Helicopter use in order to obtain close control of spray distribution is a part of the project control for wildlife protection. No spraying will be done when air movement will cause appreciable drift or when temperatures will cause updrafts.

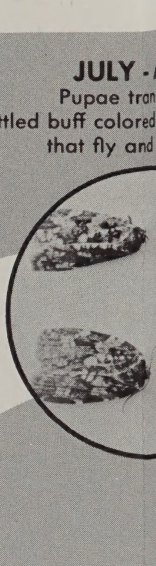
Idaho Department of Fish and Game biologists will be on hand to assist in monitoring the wildlife aspects of the project. Tight operational control will insure that all instructions and precautions are carried out.

THE SPRUCE BUDWORM

The last appearance of serious infestations requiring control occurred on the Boise, Payette, Salmon, Challis, and Targhee National Forests during the years of 1955, 1956, and 1957. The epidemic was successfully suppressed over the three-year period.

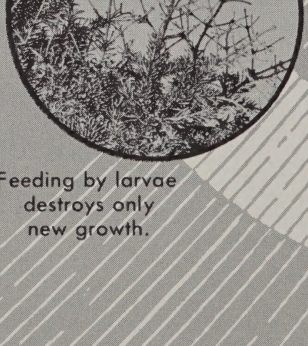
LIFE CYCLE CHART:

JULY -
Pupae tran
mottled buff colored
that fly and

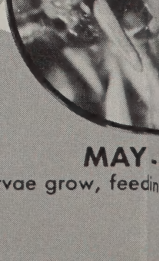


LATE JULY
When through feeding larvae transform to pupae attached to twigs.

SUSCEPT
TO SPR

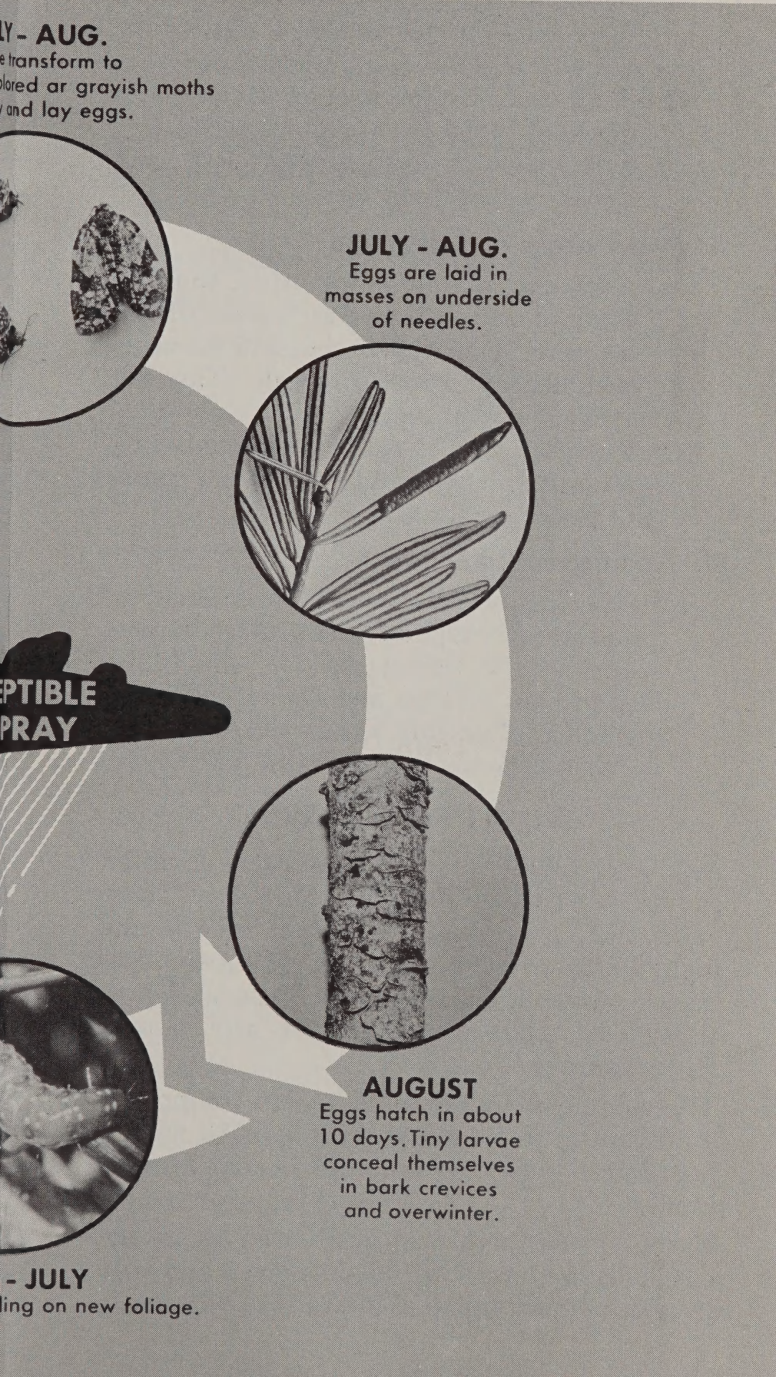


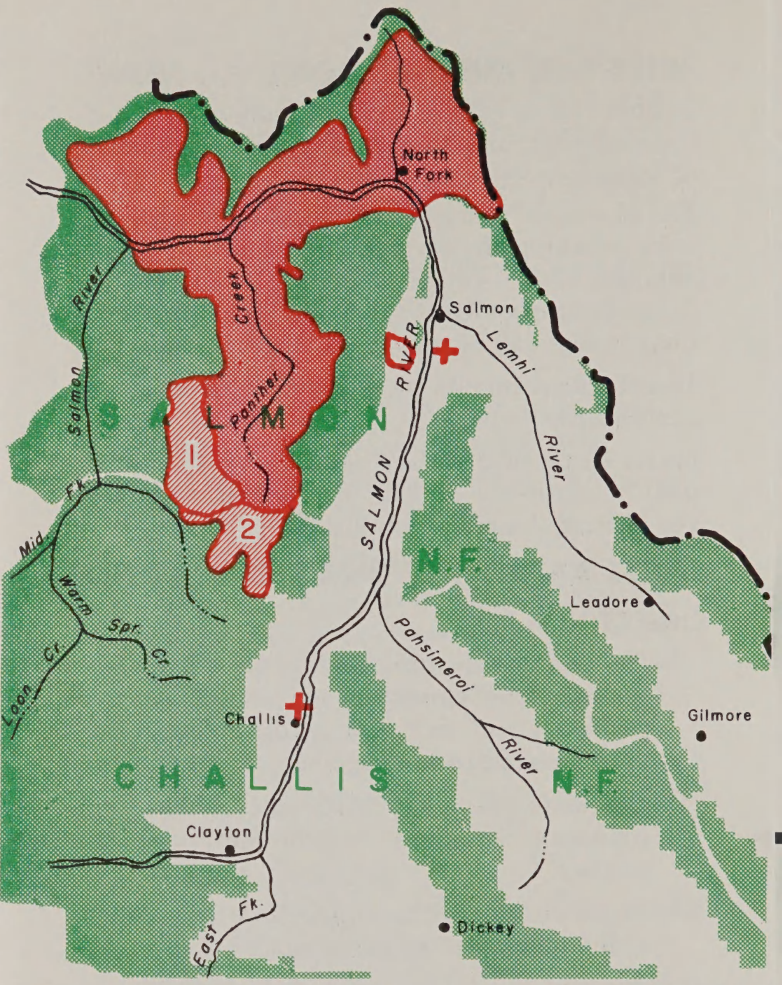
Feeding by larvae destroys only new growth.



MAY -
Larvae grow, feedin

The spruce budworm is one of the most potentially destructive enemies of Douglas-fir and true fir in North America. Principal damage results from the caterpillars feeding on the new foliage. Deformation and reduced growth or death of the trees are the inevitable results of sustained, uncontrolled attacks of the pests. The insect attacks trees of all ages indiscriminately.





SPRUCE BUDWORM CONTROL AREAS
SALMON—CHALLIS
NATIONAL FORESTS
1964

SCALE MILES

0 10 20 30 40

LEGEND

- NATIONAL FORESTS
- CONTROL AREA
- AIR BASES
- TEST AREA
- 2 EXPANSION AREAS

COOPERATION:

This is a cooperative effort to save the threatened timber under provision of Public Law 110, the Forest Pest Control Act of 1947. Interested agencies and others actively cooperating with the Forest Service in various phases of the project are:

Idaho Department of Fish and Game

Idaho State Department of Forestry

Idaho State Department of Aeronautics

Intermountain Forest Pest Action Council

U. S. Weather Bureau

U. S. Agricultural Research Service

U. S. Fish and Wildlife Service

U. S. Federal Aviation Agency

OPERATING PERSONNEL:

Project Leader . . . . . Clifford T. Solberg

Air Operations . . . . . Robert K. Pattee

Ground Operations . . . . . Roger Taynton

Monitor Coordinator . . . . . Robert L. Casebeer

Safety . . . . . Orlo Johnson

Entomology . . . . . C. Kendall Lister

Information . . . . . Lowell J. Farmer

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
INTERMOUNTAIN REGION